

BIOHACK NOTES



HUMAN REPRODUCTION

- BASED ON ACTIVE RECALL AND SPACED REPETITION
- TARGET 360/360 IN NEET BIOLOGY & 100/100 IN BOARDS!



PARTH GOYAL

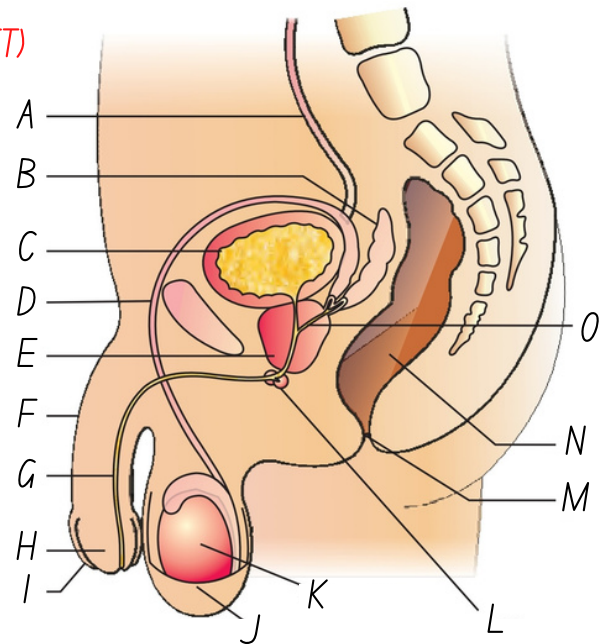




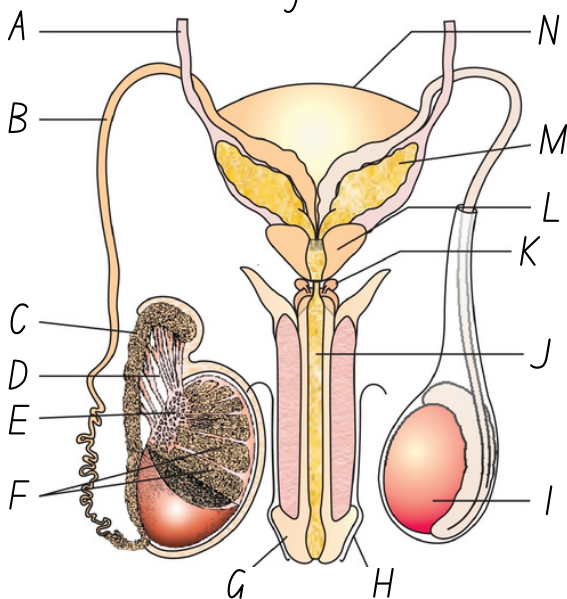
• THE MALE REPRODUCTIVE SYSTEM

1. Testis are situated in a pouch called _____ (NEET)
2. Scrotum helps to lower the temperature by _____ °C. (NEET)
3. Lowering temperature is necessary for _____ (NEET)
4. Length and width of testis is about -
5. How many seminiferous tubules are present in testis?
6. How many testicular lobules are present in testis?
7. Each lobule contains _____ no. of seminiferous tubules.
8. Seminiferous tubule is lined on its inside by two types of cells called _____ and _____
9. _____ provide nutrition to germ cells. (NEET)
10. Immunologically competent cells are absent in regions outside seminiferous tubule. T/F
11. Arrange the male accessory ducts in sequence from testis to urethra (4) - (NEET)
12. Epididymis is located in anterior/posterior surface of testis.
13. _____ is the male external genitalia.
14. The enlarged end of penis is called _____ and is covered by a loose fold of skin called _____
15. Male accessory glands include (3) - (NEET)
16. Seminal plasma is rich in (3) - (NEET)
17. Bulbourethral gland is also called _____ gland and help in _____

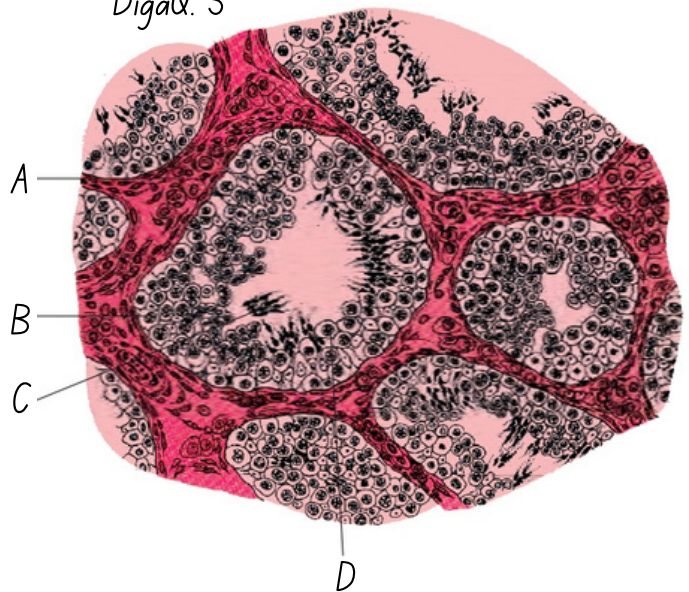
DigaQ. 1



DigaQ. 2



DigaQ. 3





• THE FEMALE REPRODUCTIVE SYSTEM

18. Primary female sex organ is -

19. Ovary length is ____-____ cm.

20. Ovary is connected to pelvic wall and uterus by _____

21. Ovary is covered by thick/thin epithelium which encloses _____

22. Stroma is divided into 2 zones namely, _____ and _____

23. Female accessory ducts include (3) -

24. Fallopian tube length is -

25. 3 parts of fallopian tube are - (NEET)

26. Infundibulum is _____ shaped. (NEET)

27. Finger-like projections from infundibulum are called _____ (NEET)

28. Fxn of fimbriae is -

29. Ampulla is a narrow lumen. T/F

30. _____ is a wider part of oviduct and _____ is a narrow lumen.

31. Uterus is also called _____

32. Cervical canal along with vagina forms -

33. The 3 layers of wall of uterus is - (NEET)

34. Perimetrium is thick. T/F

35. Wall which is glandular in nature is -

36. Myometrium is a thick/thin layer of _____ types of muscles.

37. _____ is a cushion of fatty tissue covered by skin and pubic hair. (NEET)

38. _____ extend down from the mons pubis and surrounds the vaginal opening.

39. _____ are paired folds of tissue under the labia majora.

40. Opening of the vagina is covered partially by a membrane called _____

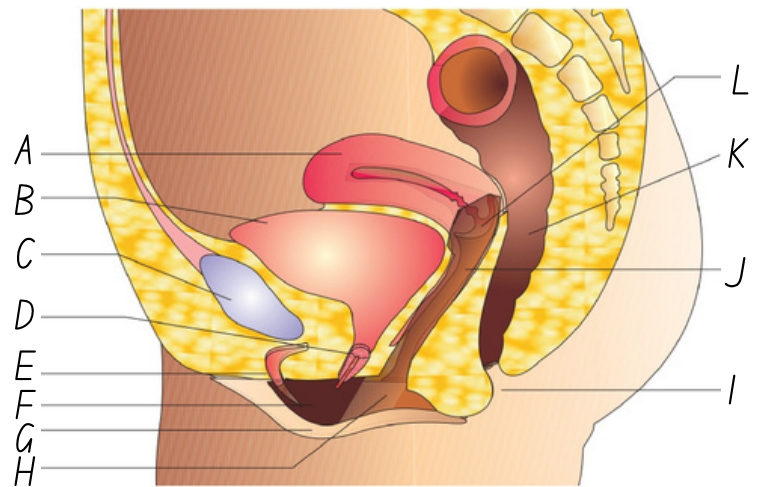
41. Clitoris lies at the upper junction of _____ above/below urethral opening.

42. Presence of hymen means the female is a virgin. T/F

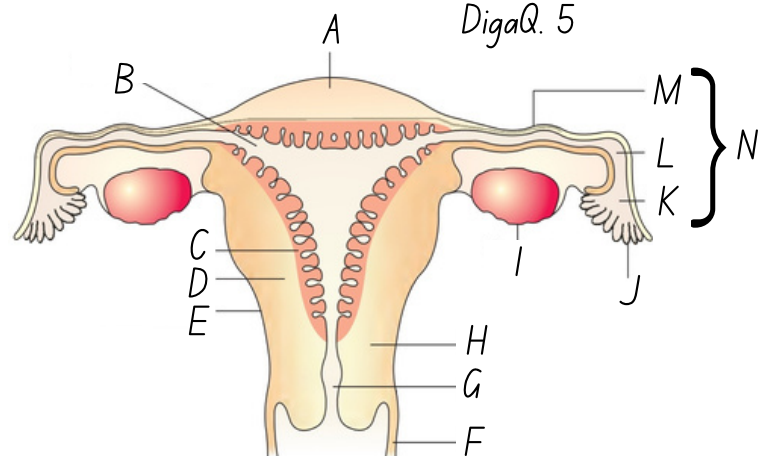
43. Each breast contains ____-____ no. of mammary lobes.

44. Describe the pathway from milk producing site to outside.

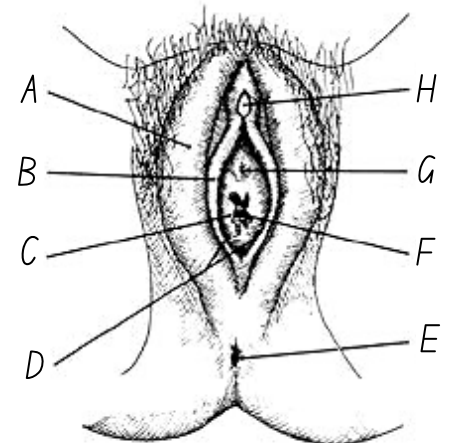
DigaQ. 4



DigaQ. 5



DigaQ. 6



PARTH GOYAL



• GAMETOGENESIS

45. Spermatogonia is haploid. T/F

46. Spermatogonia differentiate to - (NEET)

47. Primary spermatocytes are haploid. T/F

48. Write the various stages of gametogenesis. (5)

49. First haploid stage of gametogenesis is - (NEET)

50. Secondary spermatocytes have DNA content equal to spermatogonia. T/F

51. Spermatids are transformed into sperms by the process called _____

52. What is spermiation ?

53. LH acts on _____ and FSH acts on _____ (NEET)

54. Sperm is composed of (4) -

55. The sperm head is covered by a cap-like structure called _____ (NEET)

56. The middle piece contain _____ (NEET)

57. _____ is filled with enzymes that help fertilisation of the ovum.

58. Human male ejaculate about _____-_____ million sperms during coitus.

59. At least _____ % of the total sperms must show vigorous motility.

60. At least, _____ % sperms must have normal shape and size.

61. At least, _____ % of them must show vigorous motility.

62. Semen = _____ + _____

63. Oogenesis is initiated after the onset of puberty. T/F (NEET)

64. Primary oocytes are arrested at _____ stage of meiosis. (NEET)

65. Primary oocyte surrounded by _____ is called primary follicle.

66. Total primary follicles left at puberty in a female body is _____

67. Primary follicles surrounded by _____ and _____ are called secondary follicles.

68. Tertiary follicle is characterised by - (NEET)

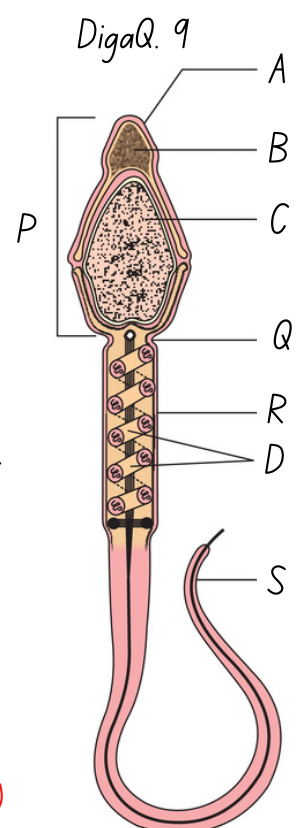
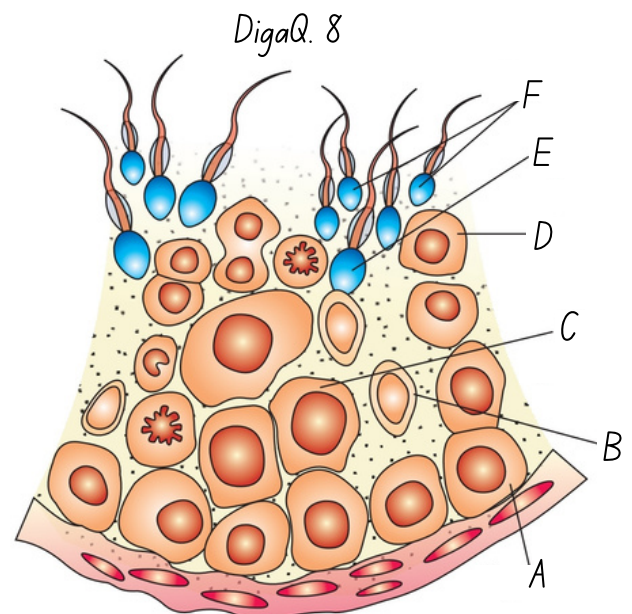
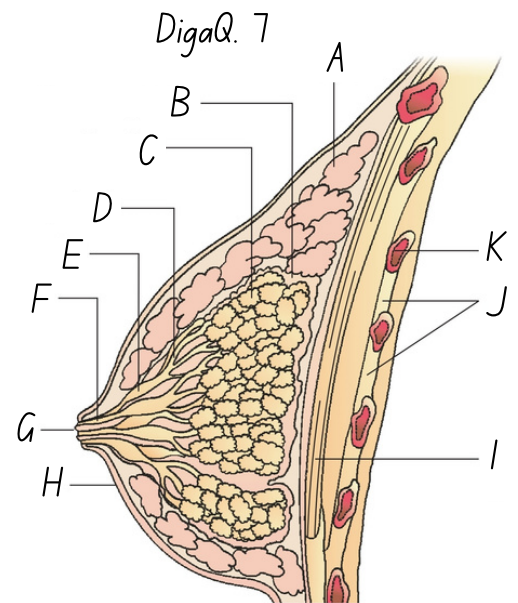
69. The theca layer in tertiary follicle is organised into _____ and _____

70. Primary oocyte completes its first meiotic division in _____ stage of follicle.

71. Primary oocyte after meiosis forms _____ and _____

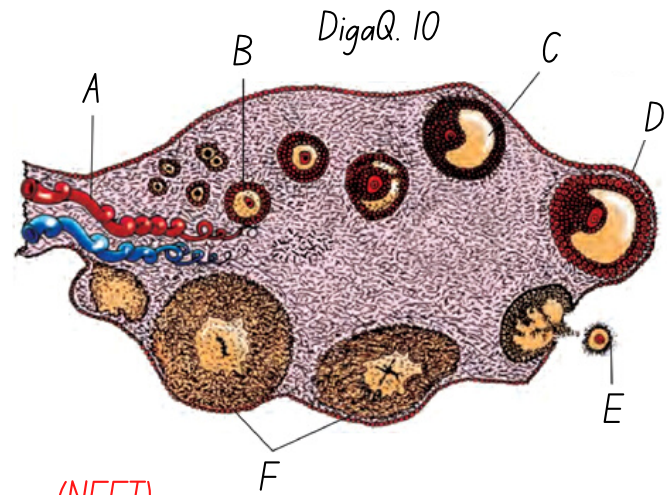
72. Tertiary follicle further changes into -

73. Secondary oocyte forms a new membrane called _____ surrounding it. (NEET)





• MENSTRUAL CYCLE



74. Menstruation begins at _____ and stops at _____

75. Menses lasts for about ____-__ days.

76. Follicular phase is also called _____

77. FSH and LH increase gradually during the _____ phase. (NEET)

78. Secretory phase is also called _____

79. Luteal phase remains constant, i.e. of 14 days. T/F

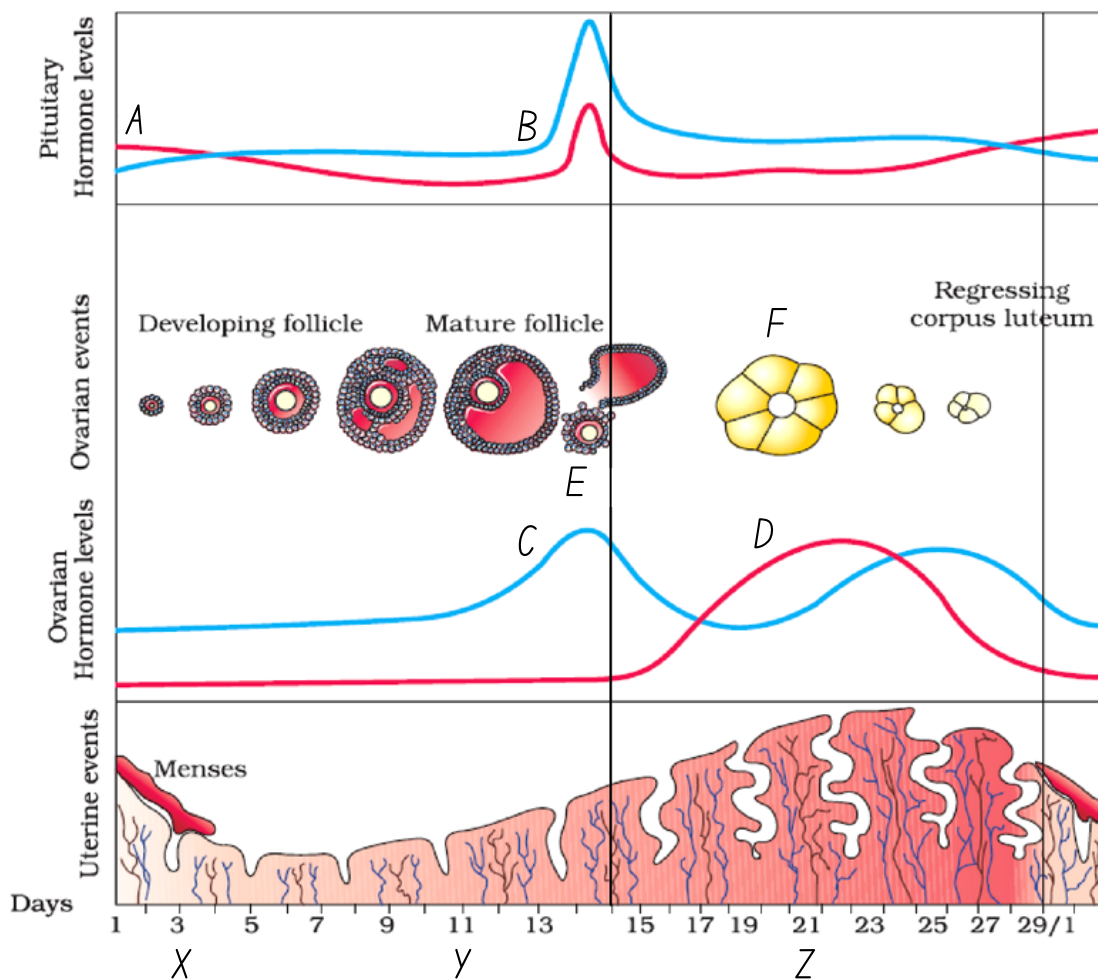
80. LH surge causes _____

81. Graffian follicle transforms into _____ (NEET)

82. Corpus luteum secrete large amounts of _____ to maintain _____ (NEET)

83. Menstrual cycles ceases around ____ years of age.

DigaQ. 11





• FERTILISATION AND IMPLANTATION

84. Fertilisation takes place at _____ region of fallopian tube. (NEET)

85. When a sperm comes in contact with _____, it causes blockage of entry of other sperms. (NEET)

86. What is ootid?

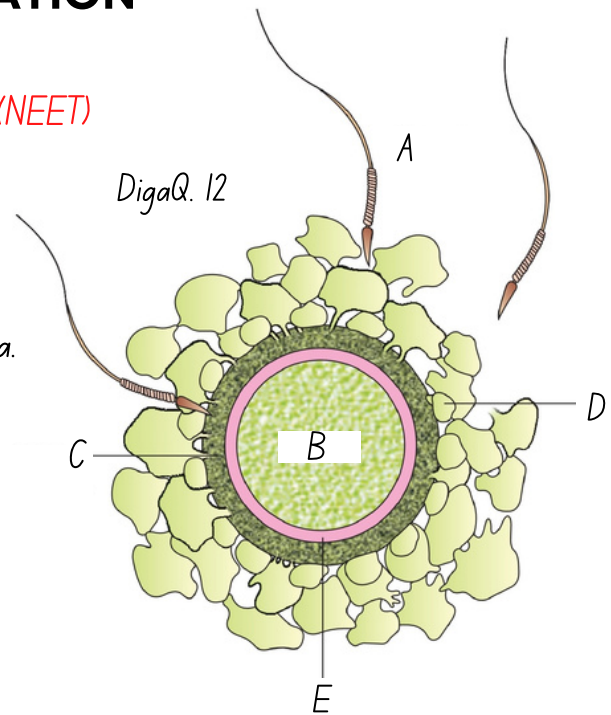
87. The embryo with ____-____ no. of blastomeres is called morula.

88. Morula transforms into -

89. Blastomeres are arranged in outer layer called _____ and an inner group of cells called _____

90. _____ layer then gets attached to the endometrium.

91. What is implantation?



• PREGNANCY AND EMBRYONIC DEVELOPMENT

92. Finger-like projections appear on the trophoblast called _____

93. _____ and _____ jointly form placenta.

94. Name some hormones secreted by placenta (5) - (NEET)

95. Hormones produced only during pregnancy (3) - (NEET)

96. Levels of cortisol and thyroxine increase several folds during pregnancy. T/F

97. Immediately after implantation, the inner cell mass differentiates into - (3)

98. Longest gestation period is of _____

99. Body is covered with fine hair by the end of ____th month, whereas appearance of hair on head occurs at the end of ____th month.

100. Most of the major organ systems are formed by the end of ____th month.

101. Eyelashes separate, eyelids are formed at the end of 6th month. T/F

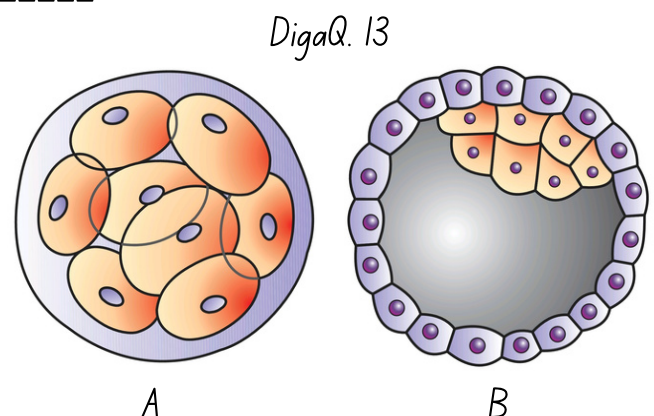
102. In humans, after 1 month of pregnancy, _____ is formed.

103. By the end of 2nd month, fetus develops _____ and _____

104. By the end of 3 months - (3)

105. By the end of 5th month - (2)

106. By the end of 6th months - (3)





• PARTURITION AND LACTATION

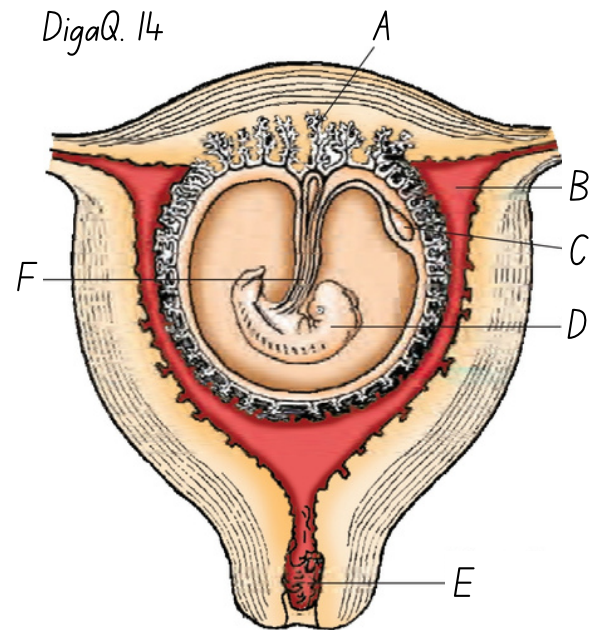
107. The signals for parturition originate from mother/foetus.

108. What is foetal ejection reflex ? (NEET)

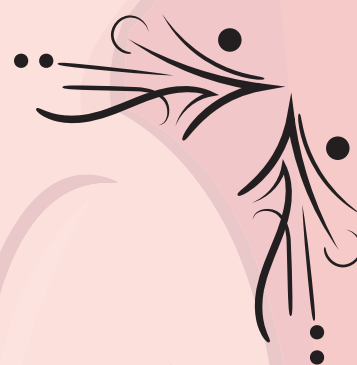
109. Parturition is an example of positive/negative feedback mechanism.

110. _____ contains several antibodies produced during the initial days of lactation.

111. Parturition is induced by complex neuroendocrine mechanism involving hormones (3) -



HUMAN REPRODUCTION



PARTH GOYAL



ANSWERS

• ♂ REPRODUCTIVE SYSTEM

1. Scrotum
2. 2-2.5°C
3. Spermatogenesis
4. Length - 4-5 cm, Width - 2-3 cm
5. 500-750
6. 250
7. 2-3
8. Male germ cell and sertoli cell
9. Sertoli
10. F
11. rete testis, vasa efferentia, epididymis and vas deferens
12. Posterior
13. Penis
14. Glans penis, foreskin
15. Seminal vesicles, prostate and paired bulbourethral glands
16. Fructose, calcium and certain enzymes
17. Cowper, lubrication of penis

• ♀ REPRODUCTIVE SYSTEM

18. Ovary
19. 2-4 cm
20. Ligaments
21. Thin, ovarian stroma
22. Peripheral cortex and inner medulla
23. Oviducts, uterus and vagina
24. 10-12 cm
25. Infundibulum, ampulla, isthmus
26. Funnel
27. Fimbriae
28. Collection of ovum after ovulation
29. F
30. Ampulla, isthmus
31. Womb
32. Birth canal

33. Perimetrium, myometrium and endometrium
34. F
35. Endometrium
36. Thick, smooth
37. Mons pubis
38. Labia majora
39. Labia minora
40. Hymen
41. Labia minora, above
42. F
43. 15-20
44. Mammary alveolus → mammary duct
→ ampulla → lactiferous duct

• GAMETOGENESIS

45. F
46. Primary spermatocyte
47. F
48. Spermatogonia - primary spermatocyte -
secondary spermatocyte - spermatid - spermatozoa
49. Secondary spermatocyte
50. T
51. Spermiogenesis
52. Release of sperms into seminiferous tubule
53. Leydig cells, sertoli cells
54. Head, neck, middle piece, tail
55. Acrosome
56. Mitochondria
57. Acrosome
58. 200-300
59. 24
60. 60
61. 40
62. Seminal fluid + sperms
63. F



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64. Prophase - I
65. Granulosa cells
66. 1,20,000-1,60,000
67. Granulosa cell and new theca
68. Fluid filled antrum
69. Outer theca externa and inner theca interna

70. Tertiary
71. Secondary oocyte and polar body
72. Graffian follicle
73. Zona pellucida

• MENSTRUAL CYCLE

74. Menarche, menopause
75. 3-5
76. Proliferative phase
77. Follicular phase
78. Luteal phase
79. T
80. Ovulation
81. Corpus luteum
82. Progesterone, endometrium
83. 50

• FERTILISATION & IMPLANTATION

84. Ampullary
85. Zona pellucida
86. Haploid ovum
87. 8-16
88. Blastocyst
89. Trophoblast, inner cell mass
90. Trophoblast
91. After attachment, uterine cells divide rapidly and cover blastocyst, this results in blastocyst embedded with endometrium called implantation

• EMBRYONIC DEVELOPMENT

92. Chorionic villi
93. Chorionic villi and uterine tissue
94. hCG, hPL, estrogens, progesterones, relaxin

95. hCG, hPL and relaxin
96. T
97. Endoderm, mesoderm and ectoderm
98. Elephant, 22 months
99. 6th, 5th
100. 3rd
101. F
102. Heart
103. Limbs and digits
104. most of the major organ systems are formed, limbs and external genital organs are well developed
105. first movements of the foetus and appearance of hair on the head
106. body is covered with fine hair, eye-lids separate, and eyelashes are formed

• PARTURITION AND LACTATION

107. Foetus
108. The signals for parturition originate from the fully developed foetus and placenta which induce mild uterine contractions called foetal ejection reflex
109. Positive
110. Colostrum
111. cortisol, estrogens and oxytocin

• DigaQs

- | | |
|------------------------|-------------------------|
| DigaQ. I – Male pelvis | H – Glans penis |
| A – Ureter | I – Foreskin |
| B – Seminal vesicle | J – Scrotum |
| C – Urinary bladder | K – Testis |
| D – Vas deferens | L – Bulbourethral gland |
| E – Prostate | M – Anus |
| F – Penis | N – Rectum |
| G – Urethra | O – Ejaculatory duct |



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DigaQ. 2 - Male reproductive system

A - Ureter	H - Foreskin
B - Vas deferens	I - Testis
C - Epididymis	J - Urethra
D - Vasa efferentia	K - Bulbourethral gland
E - Rete testis	L - Prostate
F - Testicular lobules	M - Seminal vesicle
G - Glans penis	N - Urinary bladder

DigaQ. 3 - Seminiferous tubule

A - Interstitial cells
B - Spermatogonia
C - Spermatozoa
D - Sertoli cells

DigaQ. 4 - Female pelvis

A - Uterus	G - Labium majora
B - Urinary bladder	H - Vaginal orifice
C - Pubic symphysis	I - Anus
D - Urethra	J - Vagina
E - Clitoris	K - Rectum
F - Labium minora	L - Cervix

DigaQ. 5 - Female reproductive system

A - Uterine fundus	H - Cervix
B - Uterine cavity	I - Ovary
C - Endometrium	J - Fimbriae
D - Myometrium	K - Infundibulum
E - Perimetrium	L - Ampulla
F - Vagina	M - Isthmus
G - Cervical canal	N - Fallopian tube

DigaQ. 6 - Female external genitalia

A - Labium majora
B - Labium minora
C - Hymen
D - Opening of Bartholin gland
E - Anus
F - Vaginal orifice
G - Urethra
H - Clitoris

DigaQ. 7 - Mammary gland

A - Fat	G - Nipple
B - Mammary lobe	H - Areola
C - Mammary alveolus	I - Pectoralis major
D - Mammary duct	J - Muscles between ribs
E - Ampulla	K - Rib

DigaQ. 8 - Seminiferous tubule

A - Spermatogonium
B - Sertoli cell
C - Primary spermatocyte
D - Secondary spermatocyte
E - Spermatid
F - Spermatozoa

DigaQ. 9 - Structure of sperm

A - Plasma membrane	P - Head
B - Acrosome	Q - Neck
C - Nucleus	R - Middle piece
D - Mitochondria	S - Tail

DigaQ. 10 - Ovary

A - Blood vessels	D - Graafian follicle
B - Primary follicle	E - Ovum
C - Tertiary follicle	F - Corpus luteum

DigaQ. 11 - Menstrual cycle

A - FSH
B - LH
C - Estrogen
D - Progesterone
E - Ovulation
F - Developing corpus luteum
X - Menstruation
Y - Follicular/Proliferative phase
Z - Luteal/Secretory phase



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DigaQ. 12 – Ovum surrounded by few sperms

A – Sperm B – Ovum

C – Zona pellucida

D – Cells of the corona radiata

E – Perivitelline space

DigaQ. 13

A – Morula B – Blastocyst

DigaQ. 14 – Foetus in the uterus

A – Placental villi

B – Cavity of uterus

C – Yolk sac

D – Embryo

E – Plug of mucus in cervix

F – Umbilical cord



SCAN AND DONATE US SO THAT WE
CAN CREATE MORE SUCH QUALITY
CONTENT FOR YOU!

JUST ₹10-20 WILL BE APPRECIABLE! :)

FRIEND: TERE BIO MAI 360/360
"BIOHACK" KI VAJH SE AAYE NAA..



PARTH GOYAL